TARGET: STROKE℠

TIME LOST IS BRAIN LOST.

STROKEASSOCIATION.ORG/TARGETSTROKE

American Heart Association. | American Stroke Association.
Learn and Live.

Target: Stroke

A national quality improvement initiative of the American Heart Association/American Stroke Association to improve the care of stroke

Building on Success

- GWTG-Stroke
- Brain Attack Coalition
- Mission: Lifeline

Improving Stroke Outcomes

Current guidelines for the management of patients with acute ischemic stroke published by the AHA/ASA include specific recommendations for the administration of IV rt-PA

Despite its effectiveness in improving neurological outcomes, many patients with ischemic stroke are not treated with rt-PA, because they arrive late or because of delays in assessment/administration of IV rt-PA

Earlier administration of IV rtPA after the onset of stroke symptoms is associated with greater functional recovery

One of the potential approaches to increase treatment opportunities and improve stroke outcomes is to provide this treatment in a more timely fashion after patient arrival (reduce the door to needle time for IV rt-PA)

AHA/ASA Guideline Recommendations

Intravenous rt-PA is recommended for selected patients who may be treated within 3 hours of onset of ischemic stroke (Class I Recommendation, Level of Evidence A).

Patients who are eligible for treatment with rt-PA within 3 hours of onset of stroke should be treated as recommended in the 2007 Guidelines.

Although a longer time window for treatment with rt-PA has been tested formally, delays in evaluation and initiation of therapy should be avoided, because the opportunity for improvement is greater with earlier treatment.

rt-PA should be administered to eligible patients who can be treated in the time period of 3 to 4.5 hours after stroke (Class I Recommendation, Level of Evidence B).

AHA/ASA Guideline Recommendations

EDs should establish standard operating procedures and protocols to triage stroke patients expeditiously (Class I, Level of Evidence B).

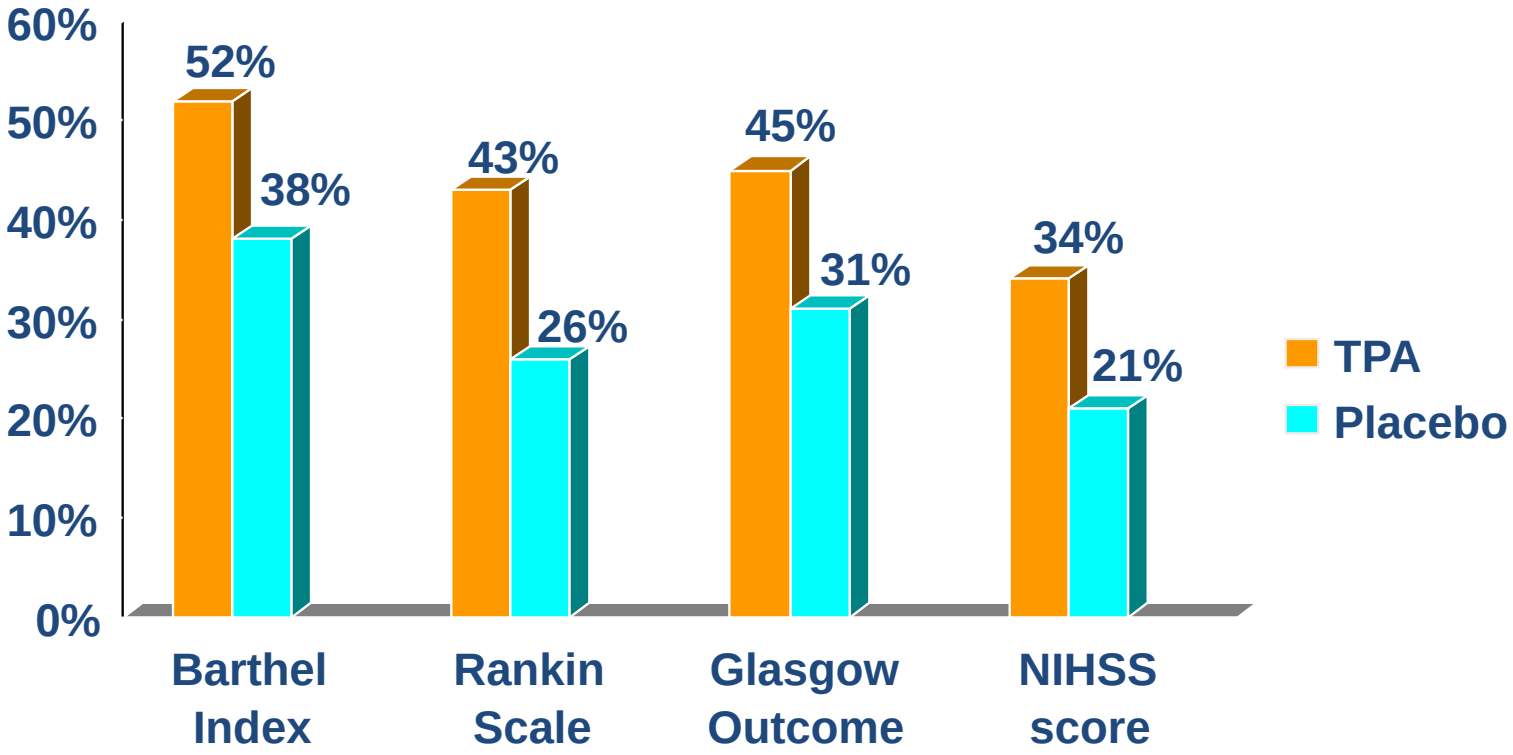
Standard procedures and protocols should be established for benchmarking time to evaluate and treat eligible stroke patients with rt-PA expeditiously (Class I, Level of Evidence B).

Target treatment with rt-PA should be within 1 hour of the patient's arrival in the ED (Class I, Level of Evidence A).

Comprehensive overview of nursing and interdisciplinary care of the acute ischemic stroke patient: a scientific statement from the American Heart. Association. *Stroke* 2009;40;2911-2944

NINDS TPA Stroke Trial

Excellent outcome at 3 months on all scales



Global outcome statistic: OR=1.7, 50% v. 38%= 12% benefit

N Engl J Med 1995;333:1581-7

Number Needed to Treat to Benefit from IV TPA Across Full Range of Functional Outcomes

Outcome	NNT
Normal/Near Normal	8.3
Improved	3.1

For every 100 patients treated with tPA,
32 benefit, 3 harmed

Stroke 2007; 38:2279-2283

Time to Treatment in Ischemic Stroke

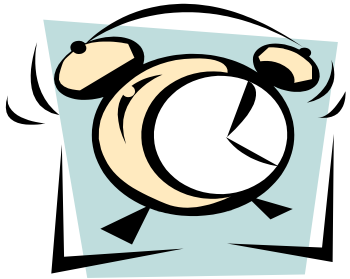
Pooled data from 6 randomized placebo-controlled trials of IV rt-PA. Treatment was started within 360 min of onset of stroke in 2775 patients randomly allocated to rt-PA or placebo

Odds of a favorable 3-month outcome increased as onset to treatment decreased (p=0.005). Odds were 2.8 (95% CI 1.8-4.5) for 0-90 min, 1.6 (1.1-2.2) for 91-180 min, 1.4 (1.1-1.9) for 181-270 min, and 1.2 (0.9-1.5) for 271-360 min in favor of the rt-PA group.

The sooner that rt-PA is given to stroke patients, the greater the benefit, especially if started within 90 minutes of symptom onset

Hacke, W., G. Donnan, et al. Association of outcome with early stroke treatment: pooled analysis of ATLANTIS, ECASS, and NINDS rt-PA stroke trials. Lancet 2004;363:768-74.

Time is Brain



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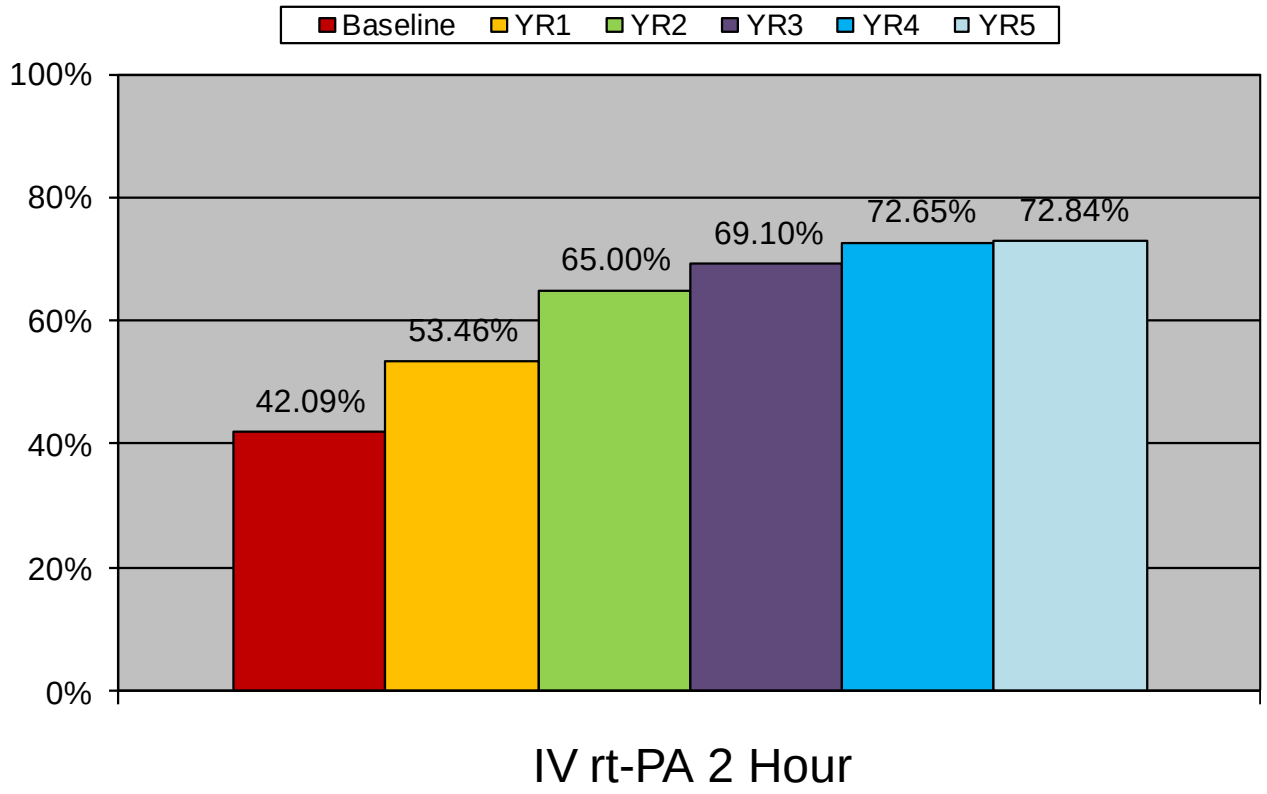
Stroke Onset to IV TPA ≤ 3 hours or ≤ 4.5 hours

Door to IV TPA Goal ≤ 60 Minutes

- STARS Registry
  - 38 community, 18 academic hospitals, 389 IV TPA pts
  - Median door to needle time: 96 minutes
- CDC 4 State Pilot Acute Stroke Registry
  - 98 hospitals, 6867 acute patients, 118 IV TPA
  - Treatment within target 60 minutes: 14.4%

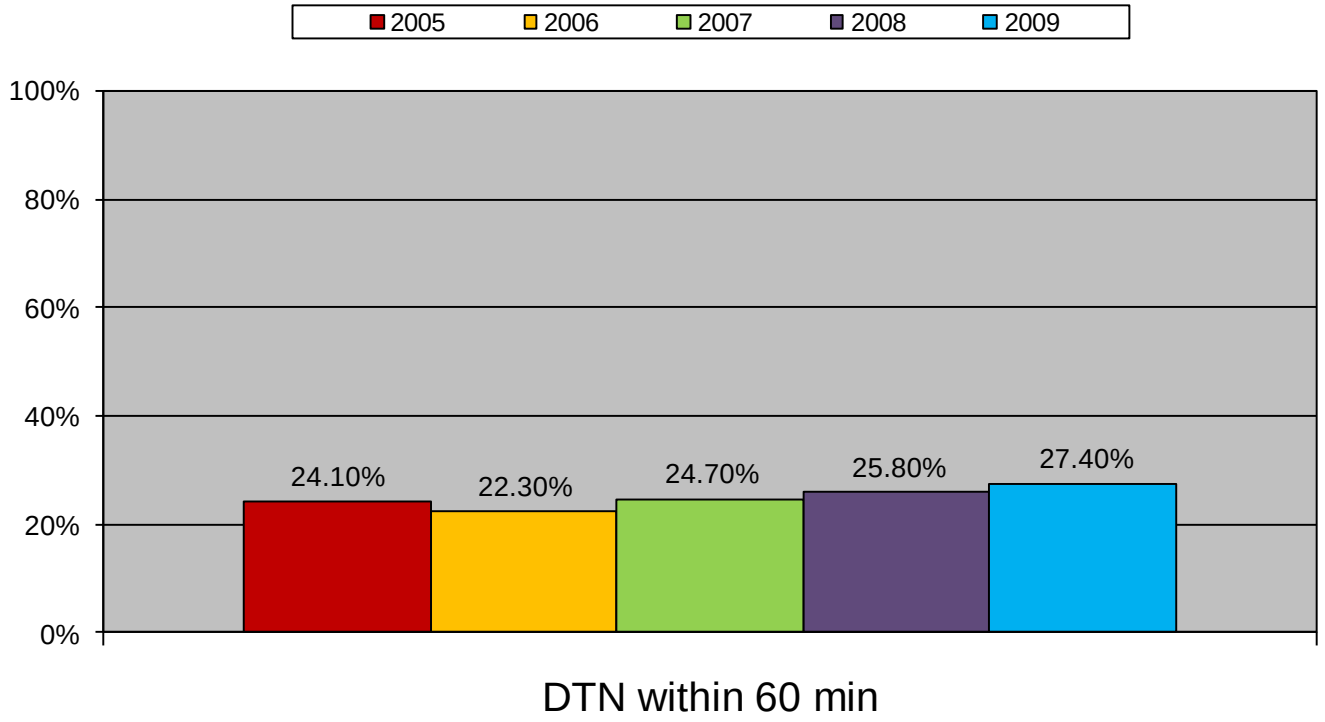
Improvement Over Time in GWTG-Stroke in the Use of IV rt-PA in Eligible Patients



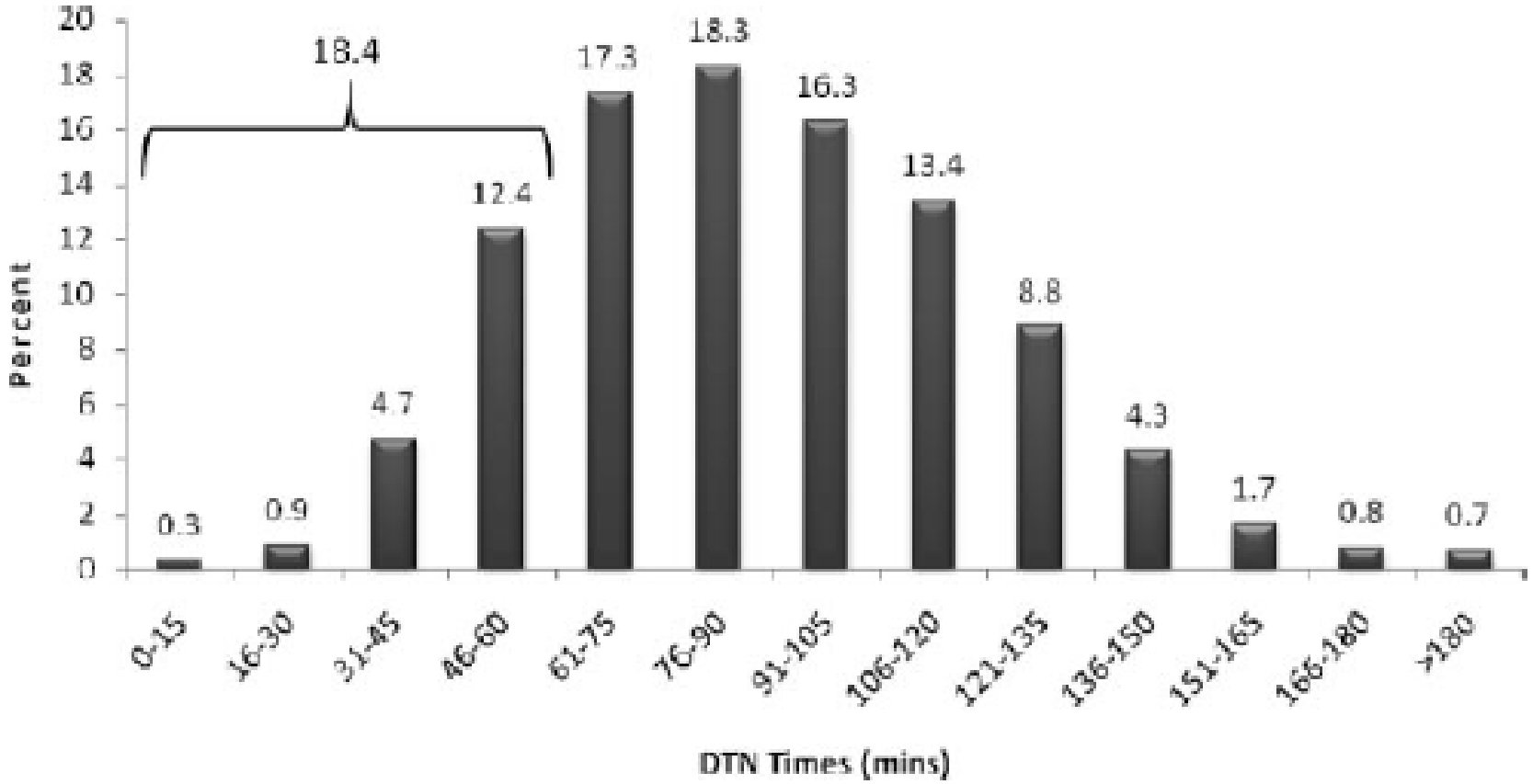
Schwamm LH et al. Circulation 2009;119:107-115

Substantial Opportunity to Improve Timeliness of IV rt-PA in Ischemic Stroke

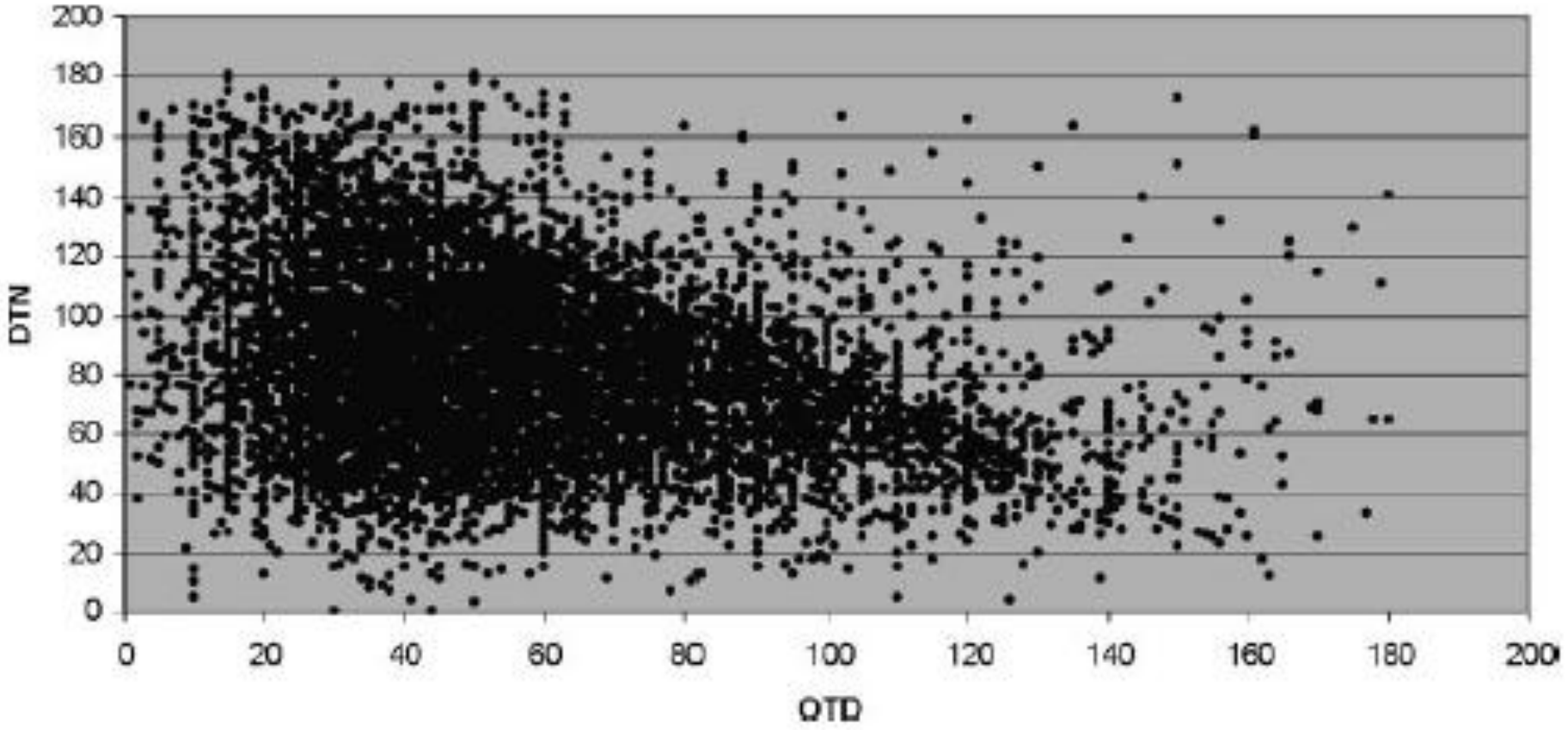
Door-to-IV rt-PA within 60 minutes



GWTG-Stroke Database, data on file DCRI



Saver et al. Stroke 2010. Presenting Features and Lytic Therapy in >30 000 Patients Arriving Within 60 Minutes of Stroke Onset The "Golden Hour" and Acute Brain Ischemia.



Saver et al. Stroke 2010. Presenting Features and Lytic Therapy in >30 000 Patients Arriving Within 60 Minutes of Stroke Onset The "Golden Hour" and Acute Brain Ischemia.

Launch Campaign

Provide IV tPA to eligible patients with acute ischemic stroke in a timely fashion

Goal

Achieve a Door to Needle (DTN) Time within 60 minutes in at least 50% of ischemic stroke patients treated with IV tPA

Target Stroke Core Concepts

1. Organize stroke team with focused goal to improve portion of eligible ischemic stroke patients receiving IV rt-PA in a timely fashion (DTN ≤ 60 minutes)
2. Implement Target: Stroke Best Practice Strategies
3. Utilize GWTG-Stroke clinical decision support tools and evidence based strategies for IV rt-PA
4. Participate in the Target: Stroke community of hospitals
5. Track progress to goal using GWTG-Stroke PMT quality measures

Target: Stroke Resources

- Target: Stroke Best Practice Strategies
- Customizable implementation tools, strategies and systems
- Guideline based algorithms, order sets, dosing charts
- Educational programs via webinar series
- Get With The Guidelines-Stroke community of hospitals
- Online exchange forums to share best practices, challenges, and successes

Time Interval Goals

1. **Perform an initial patient evaluation within 10 minutes of arrival in the emergency department**
2. **Notify the stroke team within 15 minutes of arrival**
3. **Initiate a CT scan within 25 minutes of arrival**
4. **Interpret the CT scan within 45 minutes of arrival**
5. **Ensure a door-to-needle time for IV rt-PA within 60 minutes from arrival.**

Thrombolytic Therapy Checklist

- >18 years of age with ischemic stroke < 3 hours
- Stroke deficit assessment

  --Deficit found to be potentially disabling

  --Severity quantified with NIH stroke scale (0 - 42 scale)

  (stroke scale training available at: www.asatrainingcampus.org)
- Coagulation status
  - No evidence of coagulopathy, if tested: INR < 1.8 and normal PTT If taking warfarin, INR < 1.8
  - Platelets > 100,000
- Blood Pressure SBP < 185 mm Hg, DBP < 110 mm Hg
- Glucose > 50 mg/dL

Updated from Adams HP, et al. ASA Stroke Council. *Stroke.* 2003;34:1056-1083.

Best Practice Strategies

1. Advance Hospital Notification by EMS: EMS providers should, when feasible, provide early notification to the receiving hospital when stroke is recognized in the field. Advance notification of patient arrival by EMS can shorten time to CT and improve the timeliness of treatment with thrombolysis.

2. Rapid Triage Protocol and Stroke Team Notification: Acute triage protocols facilitate the timely recognition of stroke and reduce time to treatment. Acute stroke teams enhance stroke care and should be activated as soon as the stroke patient is identified in the emergency department or after notification from pre-hospital personnel.

3. Single Call Activation System: A single call should activate the entire stroke team. A single-call activation system for the stroke team is defined here as a system in which the emergency department calls a central page operator, who then simultaneously pages the entire stroke team, including notification for stroke protocol imaging.

Best Practice Strategies

4. Stroke Tools: A Stroke Toolkit containing clinical decision support, stroke specific order sets, guidelines, hospital specific algorithms, critical pathways, NIH Stroke Scale, and other stroke tools should be available and utilized for each patient.

5. Rapid Acquisition and Interpretation of Brain Imaging: It is essential to initiate a CT scan (or MRI) within 25 minutes of arrival and complete interpretation of the CT scan within 45 minutes of arrival to exclude intracranial hemorrhage prior to administration of IV rt-PA.

6. Rapid Laboratory Testing (Including point of Care Testing if indicated): For patients in whom coagulation parameters should be assessed because of suspicion of coagulopathy, INR/PTT results should be available as quickly as possible and no later than 45 minutes after ED arrival. If standard STAT laboratory turnaround times cannot meet this target, point of care INR testing in the Emergency Department can provide the data in the needed timeframe.

Best Practice Strategies

7. Mix rt-PA Medication Ahead of Time: A useful strategy is to mix drug and set up the bolus dose and one hour infusion pump as soon as a patient is recognized as a possible rt-PA candidate, even before brain imaging. Early preparation allows rt-PA infusion to begin as soon as the medical decision to treat is made. Some drug manufacturers have policies to replace, free of charge, medications that are mixed but not given in time-critical emergency situations like this. Check with your hospital pharmacy for the proper procedures to allow you to use this strategy to shorten time to treatment without financial risk.

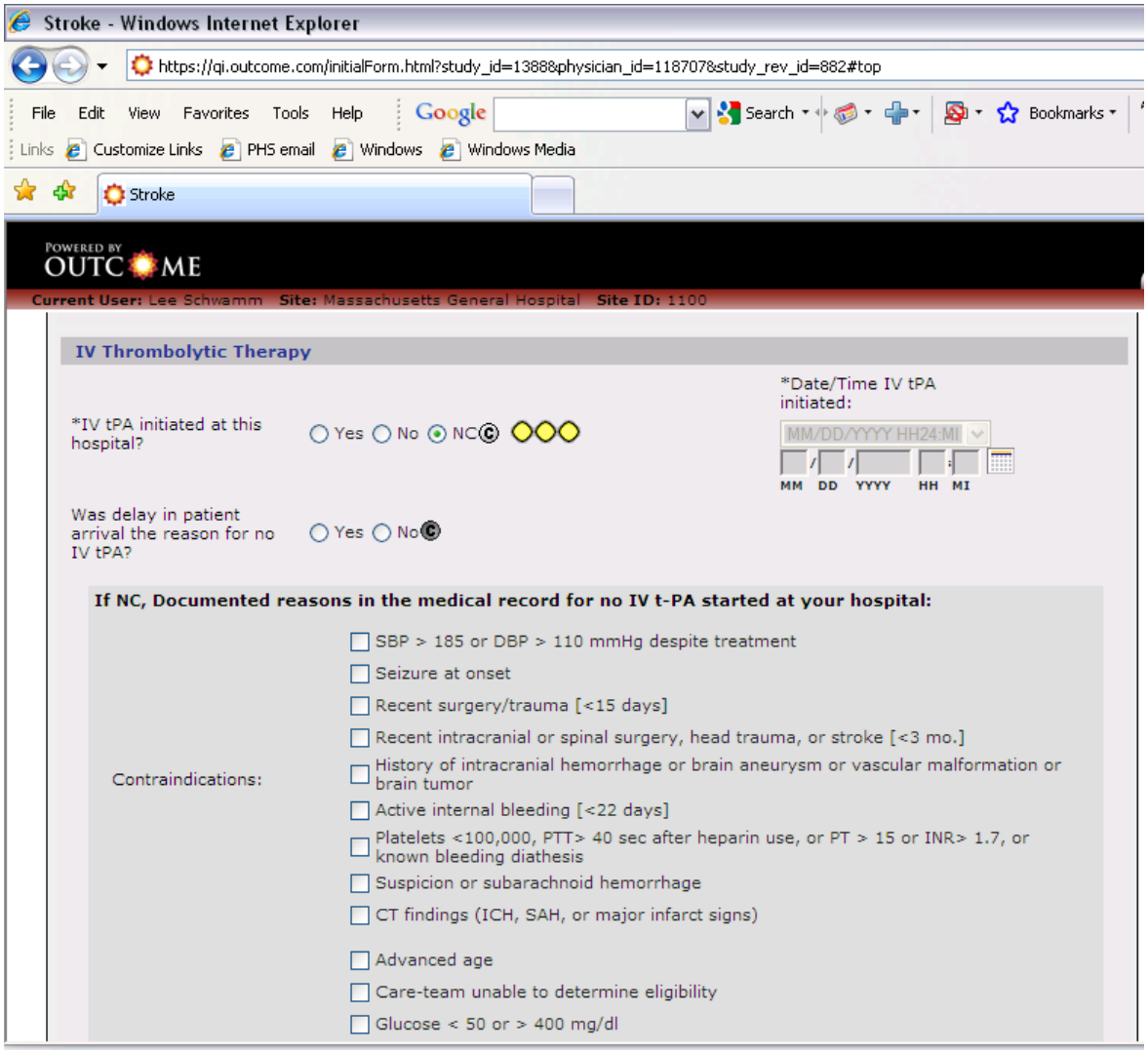
8. Rapid Access to Intravenous rt-PA: Once eligibility has been determined and intracranial hemorrhage has been excluded, IV rt-PA should be promptly administered. tPA should be readily available in the emergency department or CT scanner (if CT scanner is not located in the ED). Dosing charts and standardized order sets can also facilitate timely administration.

Best Practice Strategies

9. Team-Based Approach: The team approach based on standardized stroke pathways and protocols has proven to be effective in reducing time to treatment in stroke. An interdisciplinary collaborative team is also essential for successful stroke performance improvement efforts. The team should frequently meet to review your hospital's process and make recommendations for improvement.

10. Prompt Data Feedback: Accurately measuring and tracking your hospital's door-to-needle times equips the stroke team to identify areas for improvement and take appropriate action. A data monitoring and feedback system includes the use of the GWTG-Stroke PMT and creating a process for providing timely feedback on a case by case basis and in hospital aggregate. This system helps identify specific delays, set targets, and monitor progress on a case by case basis.

The GWTG-Stroke PMT facilitates the tracking of eligible patients, key time intervals, quality measures, and progress towards the Target: Stroke goal



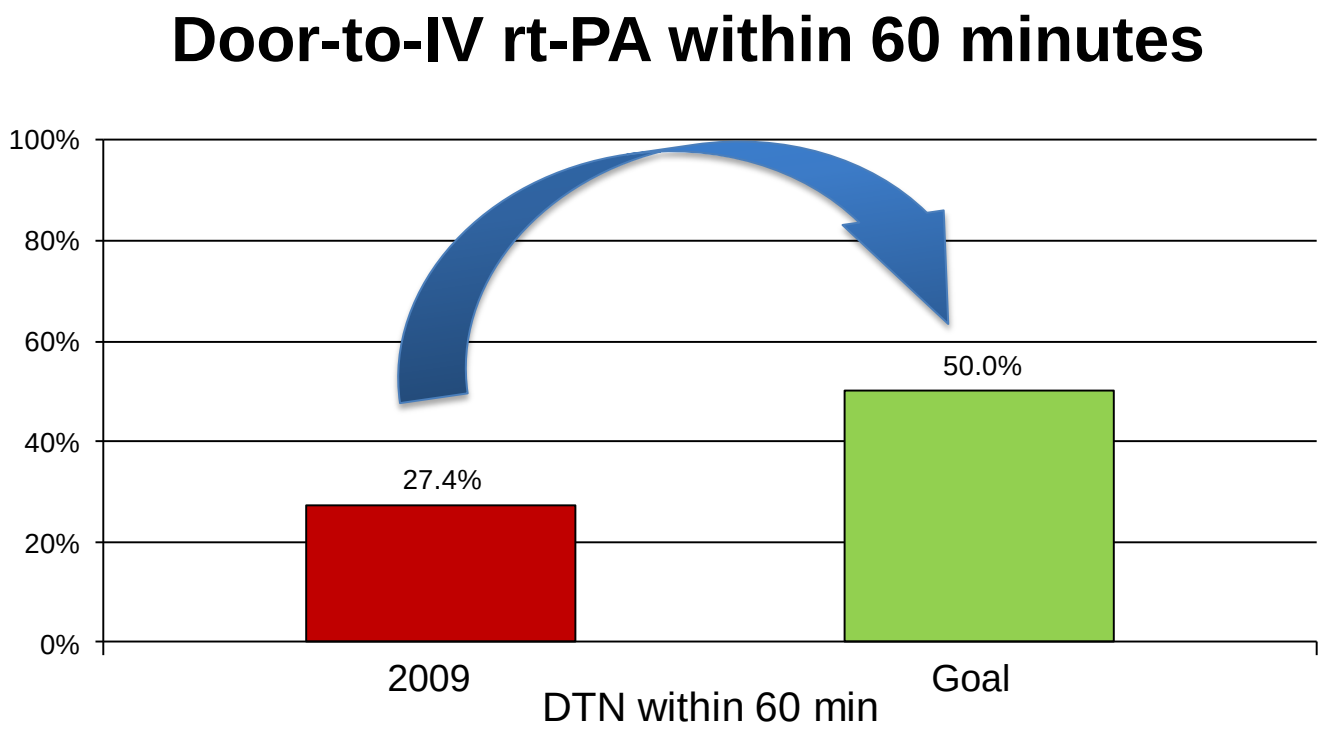
Expectations of Target: Stroke Hospitals

- Active participation to achieve the Target: Stroke goal
- Complete Baseline Survey
- Assemble dedicated Target: Stroke Improvement Team
- Implement Target: Stroke Improvement Best Practices
- Utilize Target: Stroke tools
- Track progress to achieving the Target: Stroke Goal using the GWTG-Stroke PMT reporting functions
- Share insights, experiences, and success

Benefits to Target: Stroke Participants

- Access to world-class experts and a curriculum on timely and effective acute stroke care
- Access to best practice strategies and successful efforts to improve acute stroke care and meet goals
- Online forums to exchange knowledge and improve performance
- Customizable strategies and tools
- Recognition for your hospital's stroke care

Target: Stroke The Time is Now



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strokeassociation.org/targetstroke

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